

In the claims:

Claims 1-5. (Canceled)

Claim 6. (New) A method of improving combustion efficiency in a combustion device comprising steps of:

introducing a stream of hydrogen-oxygen gas into a mixing device comprising a chamber having therein a turbulence generating element which at least partly fills said chamber;

introducing a stream of hydrocarbon gas into said mixing device;

mixing said hydrogen-oxygen gas with said hydrocarbon gas to form a mixed gas product by feeding streams of said hydrogen-oxygen gas and hydrocarbon gas through said chamber with sufficient velocity to generate turbulence; and

feeding said mixed gas product to said combustion device.

Claim 7 (New) A method according to claim 6 wherein said turbulence generating element comprises a length of metal ribbon in a bent configuration.

Claim 8. (New) A method according to claim 6 wherein said turbulence generating element comprises a porous metal.

Claim 9. (New) The method of claim 6 wherein said hydrogen-oxygen gas is the output from an electrolysis hydrogen generator device.

Claim 10. (New) The method of claim 6 wherein said mixed gas product comprises about 3 parts hydrogen or hydrogen/oxygen mixture and about 97 parts of said hydrocarbon gas.

Claim 11. (New) An apparatus for the improved combustion in a combustion device, said apparatus comprising:

a first input line for a first gas comprising a hydrocarbon gas;

a second input line for a second gas comprising hydrogen or a hydrogen-oxygen gas mixture;

a mixing device wherein said first and second gases are mixed, said mixing device comprising a chamber having a turbulence generating element therein at least partly filling said chamber for generating turbulence within said first and second gases entering said chamber; and

an output line for delivering said first and second gasses mixed to said combustion device.

Claim 12. (New) The apparatus of claim 11 wherein said turbulence generating element comprises porous metal.

Claim 13. (New) The apparatus of claim 9 wherein said turbulence generating element comprises a metal ribbon.

Claim 14. (New) The apparatus of claim 11 further comprising a hydrogen generator to generate said hydrogen-oxygen gas.

Claim 15. (New) The apparatus of claim 11 wherein said first and second input lines are disposed for entering said chamber at angles such that said first and second gasses flow into said chamber in directions substantially perpendicular to each other.

Claim 16. (New) The apparatus of claim 15 wherein said chamber is generally elongate along an elongate axis, said first input line enters said chamber parallel to said elongate axis, and both of said first and second input lines enter said chamber substantially upstream of said turbulence generating element.